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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,284

07/14/2008

Martin Schlegl

710.1045

8914

23280 7590 12/08/2009
Davidson, Davidson & Kappel, LLC
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EXAMINER

TIETJEN, MARINA ANNETTE

ART UNIT

PAPER NUMBER

3753

MAIL DATE

DELIVERY MODE

12/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/579,284	Applicant(s) SCHLEGL ET AL.	
	Examiner MARINA TIETJEN	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-17 and 19-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-17 and 19-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/15/2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This office action is responsive to the amendment filed on 07/20/2009. As directed by the amendment: claim 11 has been amended, claim 18 has been cancelled, and new claims 22 and 23 have been added. Thus, claims 11-17, 19-23 are presently pending in this application.

Response to Arguments

2. Applicant's arguments with respect to claims 11-23 have been considered but are moot in view of the new ground(s) of rejection. The instant Office Action has been made Final.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

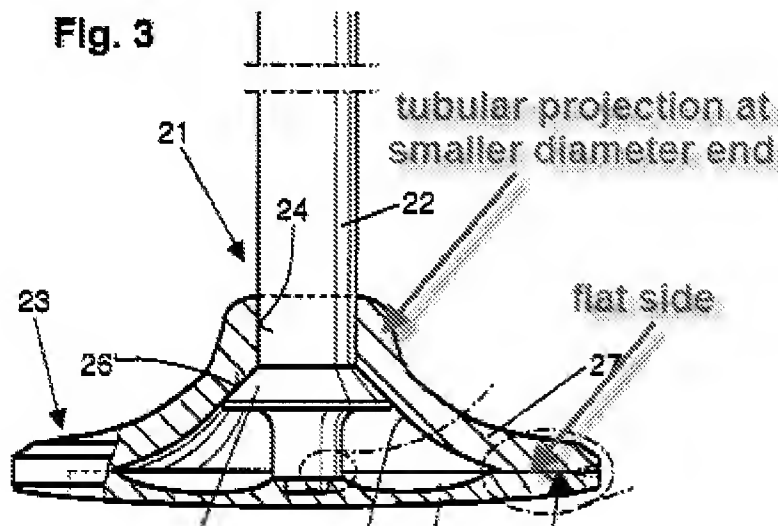
Art Unit: 3753

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 11-17 and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meintschel (DE 10204122) in view of Keck et al. (U.S. Pat. No. 5,054,195).

Meintschel discloses a lightweight valve (fig. 3) comprising:

a valve stem (22, fig. 3); a hollow valve cone (27) with a hollow space having an end of greater diameter; and a valve disk (28) closing the hollow space on one side and having a flat side (see labeled fig. 3 below) facing the valve cone (27);



the valve stem (22) being connected to a stem connection element (24) formed on or fastened to the valve disk (28);

a valve cone support (26) located at a distance from the valve disk (28) and provided in the hollow space, the valve cone support (26) being located on the stem connection element (24) and projecting above the flat side (labeled fig. 3 above);

Art Unit: 3753

wherein the valve cone support (26) includes at least one supporting surface (26') bearingly contacting an inner wall region of the valve cone (27);

wherein a contour of the supporting surface (26') complements the inner wall region;

wherein the valve cone support (26) is formed by a thickening on the stem connection element (24);

wherein the valve cone (27) is of disk-spring-shaped design (cone has concave shaped surface like a disk-spring);

wherein the valve cone (27) has, at a smaller diameter end, a tubular projection (see labeled fig. 3 above) for guiding through the valve stem (22) or the stem connection element (24);

wherein the valve cone support (26) forms a centering or supporting seat for the valve cone (27); and

wherein the valve is an internal combustion engine valve;

However, Meintschel does not disclose the valve disk having a recess serving as a centering or supporting seat for receiving the end of greater diameter of the valve cone, the valve disk including a step extending upward from the flat side of the valve disk so as to define an inner circumference of the recess, the step supporting an inner circumference of the end of greater diameter of the valve cone; wherein the valve disk includes a frusto-conical portion that forms an outer bearing surface of the recess and supports an end face of the end of greater diameter of the valve cone; and wherein a

Art Unit: 3753

cone angle of the frusto-conical portion of the valve disk is the same as a cone angle of the valve cone at the end of greater diameter.

Keck et al. teaches a valve disk (10, figs. 5a and 5b) having a recess (created by step 11) receiving the end of a greater diameter of a valve cone (lower portion of 3), the valve disk (10) including a step (11) extending upward from a flat side of the valve disk (10) so as to define an inner circumference of the recess, the step (11) supporting an inner circumference of the end of greater diameter of the valve cone (3); wherein the valve disk (10) includes a frusto-conical portion (top surface of 10 which meets with 3 at connection 9) that forms an outer bearing surface of the recess and supports an end face of the end of greater diameter of the valve cone (3); and wherein a cone angle of the frusto-conical portion of the valve disk is the same as a cone angle of the valve cone (3) at the end of greater diameter, for the purpose of providing means for centering the valve stem in relation to the valve disc, and wherein the frusto-conical portion provides a smooth transition between the valve disc and the valve cone to ensure the seating surface of the valve functions properly.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Meintschel's valve, such that the valve disk has a recess receiving the end of greater diameter of the valve cone, the valve disk including a step extending upward from the flat side of the valve disk so as to define an inner circumference of the recess, the step supporting an inner circumference of the end of greater diameter of the valve cone; wherein the valve disk includes a frusto-conical portion that forms an outer bearing surface of the recess and supports an end face of

Art Unit: 3753

the end of greater diameter of the valve cone; and wherein a cone angle of the frusto-conical portion of the valve disk is the same as a cone angle of the valve cone at the end of greater diameter, as taught by Keck et al., for the purpose of providing means for centering the valve stem in relation to the valve disc, and wherein the frusto-conical portion provides a smooth transition between the valve disc and the valve cone to ensure the seating surface of the valve functions properly.

6. Claims 22-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Meintschel (DE 10204122) in view of Ysberg (U.S. Pat. No. 3,911,875).

Meintschel discloses a lightweight valve (fig. 3) comprising:

a valve stem; a hollow valve cone (27) with a hollow space; a valve disk (28) closing the hollow space on one side and having a flat side facing (see labeled fig. 3 above) the valve cone (27);

the valve stem (22) being connected to a stem connection element (24) formed integrally on or fastened to the valve disk (28); and

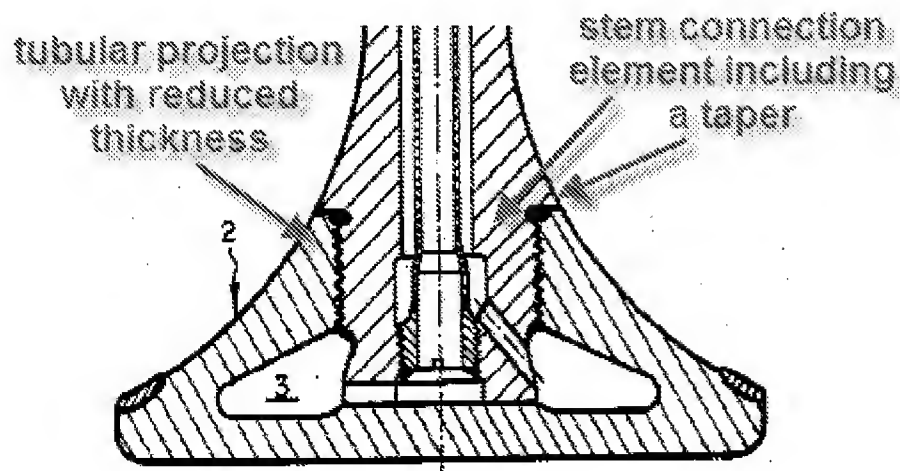
a valve cone support (26) located at a distance from the valve disk (28) and provided in the hollow space, the valve cone support (26) being located on the stem connection element (24) and projecting above the flat side, the valve cone (27) including an end of smaller diameter extending axially as a tubular projection (see labeled fig. 3 above) to contact the stem connection element (24).

However, Meintschel does not disclose the tubular projection having a reduced thickness in relation to a remainder of the cone so that the tubular projection nestles

Art Unit: 3753

against the stem connection element; and wherein the stem connection element includes a taper receiving the tubular projection such that a continuous transition is formed between the tubular projection and the stem connection element.

Ysberg teaches a cone with a tubular projection (see labeled fig. below) having a reduced thickness in relation to a remainder of the cone (2) so that the tubular projection nestles against the stem connection element (see labeled fig. below); and wherein the stem connection element includes a taper (see labeled fig. below) receiving the tubular projection, for the purpose of providing a connection means which provide a smooth transition between the valve stem and the valve cone.



It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Meintschel's valve, such that the tubular projection is a reduced thickness in relation to a remainder of the cone so that the tubular projection nestles against the stem connection element; and wherein the stem connection element includes a taper receiving the tubular projection, as taught by Ysberg, for the purpose of

Art Unit: 3753

providing a connection means which provide a smooth transition between the valve stem and the valve cone.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Pat. Nos. 2,407,561 (Lincoln) and 6,263,849 (Bonesteel et al.) disclose a recess for receiving the greater end of a valve cone.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARINA TIETJEN whose telephone number is (571) 270-5422. The examiner can normally be reached on Mon-Thurs, 9:30AM-5:00PM EST.

Art Unit: 3753

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ROBIN EVANS can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/M. T./
Examiner, Art Unit 3753

/John K. Fristoe Jr./
Primary Examiner, Art Unit 3753